

What is claimed is:

- 1) A novel water-in-oil emulsion fuel comprising of the components:
  - A) hydrocarbonaceous middle distillate fuel, and
  - B) hydrocarbonaceous middle distillate fuel additive comprised of water, ammonia hydroxide, a polyanhydride, and a mixture of fatty acids.
- 2) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said hydrocarbonaceous middle distillate fuel constitutes by percentage by weight of the novel water-in-oil emulsion of a range from 95.0% to 81.0%.
- 3) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said hydrocarbonaceous middle distillate fuel additive constitutes by percentage by weight of the novel water-in-oil emulsion fuel of a range from 5.0% to 19.0%.
- 4) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said water constitutes a percentage by weight of the hydrocarbonaceous middle distillate fuel additive of a range from 0.0% to 25.0%.
- 5) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said has water from which particulate impurities have been removed from it.
- 6) A novel water-in-oil emulsion fuel as recited in claim 5 wherein said particulate impurities are removed from the said water through the process of reverse osmosis.
- 7) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said ammonia hydroxide constitutes a percentage by weight of the hydrocarbonaceous middle distillate fuel additive of a range from 10.0% to 20.0%.
- 8) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said mixture of fatty aids constitutes a percentage of weight of hydrocarbonaceous middle distillate fuel additive of a range from 0.3% to 10.0%.
- 9) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said polyanhydride constitutes a percentage by weight of the hydrocarbonaceous middle distillate fuel from a range of 3.0% to 10.0%
- 10) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said polyanhydride is a polyalkenyl succinic anhydride.

- 1 11) A novel water-in-oil emulsion fuel as recited in claim 1 wherein said alkenyl group of  
2 the polyalkenyl succinic anhydride is a butylene compound.
- 1 12) A novel water-in-oil emulsion fuel as recited in claim 11 wherein said butylene  
2 compound is isobutylene.
- 1 13) In a combustion process wherein a water-in-oil emulsion fuel is subjected to  
2 combustion in the presence of air within a combustion chamber of a compression  
3 ignition diesel engine, a method of reducing the levels of Nitrogen Oxides (NO<sub>x</sub>) in  
4 the resultant exhaust gases of the diesel engine which comprises supplying to and  
5 burning in said combustion chamber of novel water-in-oil emulsion fuel as claimed in  
6 claim 1.
- 1 14) A novel water-in-oil emulsion fuel as recited in claim 1 in which the  
2 hydrocarbonaceous middle distillate fuel further comprises at least one element  
3 selected from the group comprising of dispersants, corrosion inhibitors, antioxidants,  
4 anti-rust agents, detergents, and lubricity agents.
- 1 15) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine wherein a hydrocarbonaceous middle distillate fuel is combined with a  
3 hydrocarbonaceous middle distillate fuel additive comprised i) water, ii) ammonia  
4 hydroxide, iii) a polyanhydride, and iv) a mixture of fatty acids to form an emulsion  
5 fuel which is then subject to combustion in the presence of air within the combustion  
6 chamber of said compression ignition diesel engine.
- 1 16) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine recited in claim 15 wherein said hydrocarbonaceous middle distillate fuel  
3 constitutes by percentage by weight of the novel water-in-oil emulsion of a range  
4 from 95.0% to 81.0%.
- 1 17) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine as recited in claim 15 wherein said water constitutes a percentage by weight of  
3 the hydrocarbonaceous middle distillate fuel additive of a range from 0.0% to 25.0%.

- 1 18) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine as recited in claim 15 wherein said water has at least a portion of particulate  
3 impurities present in said water removed from said water.
- 1 19) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine as recited in claim 15 wherein said particulate impurities are removed from the  
3 said water through the process of reverse osmosis.
- 1 20) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine as recited in claim 15 wherein said ammonia hydroxide constitutes a  
3 percentage by weight of the hydrocarbonaceous middle distillate fuel additive of a  
4 range from 10.0% to 20.0%.
- 1 21) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine as recited in claim 15 wherein said mixture of fatty acids constitutes a  
3 percentage of weight of the diesel fuel additive of a range from 0.3% to 0.10.0%.
- 1 22) A method for reducing nitrogen oxide emissions from a compression ignition diesel  
2 engine as recited in claim 15 wherein said polyanhydride constitutes a percentage by  
3 weight of the hydrocarbonaceous middle distillate fuel from a range of 3.0% to  
4 10.0%.
- 1 23) A method for reducing nitrogen oxide emissions from a compression diesel engine as  
2 recited in claim 22 wherein the polyanhydride is polyisobutylene succinic anhydride.
- 1 24) A method for reducing nitrogen oxide emissions from a compression diesel engine as  
2 recited in claim 15 wherein the hydrocarbonaceous middle distillate fuel is  
3 additionally combined with at least one component selected from a group comprising  
4 of dispersants, corrosion inhibitors, antioxidants, anti-rust agents, detergents, and  
5 lubricity agents.